



Considerations for Lighting Programs

The National Energy Efficiency Program Best Practices Study

2005 National Energy Star Lighting Partner
Meeting

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Presentation Overview

- Project Background
- Residential Lighting Chapter
- Lessons Learned
- Best Practices Website and Products

Project Advisory Committee

Kenneth James - PG&E

Pierre Landry - SCE

Rob Rubin - SDG&E

Jay Luboff - (formerly) CPUC

Eli Kollman - (formerly)
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Sylvia Bender - CEC

Project Team

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Benchmarking

“Benchmarking is the process of identifying, sharing, and using best practices to improve business processes.” Source: American Productivity and Quality Center

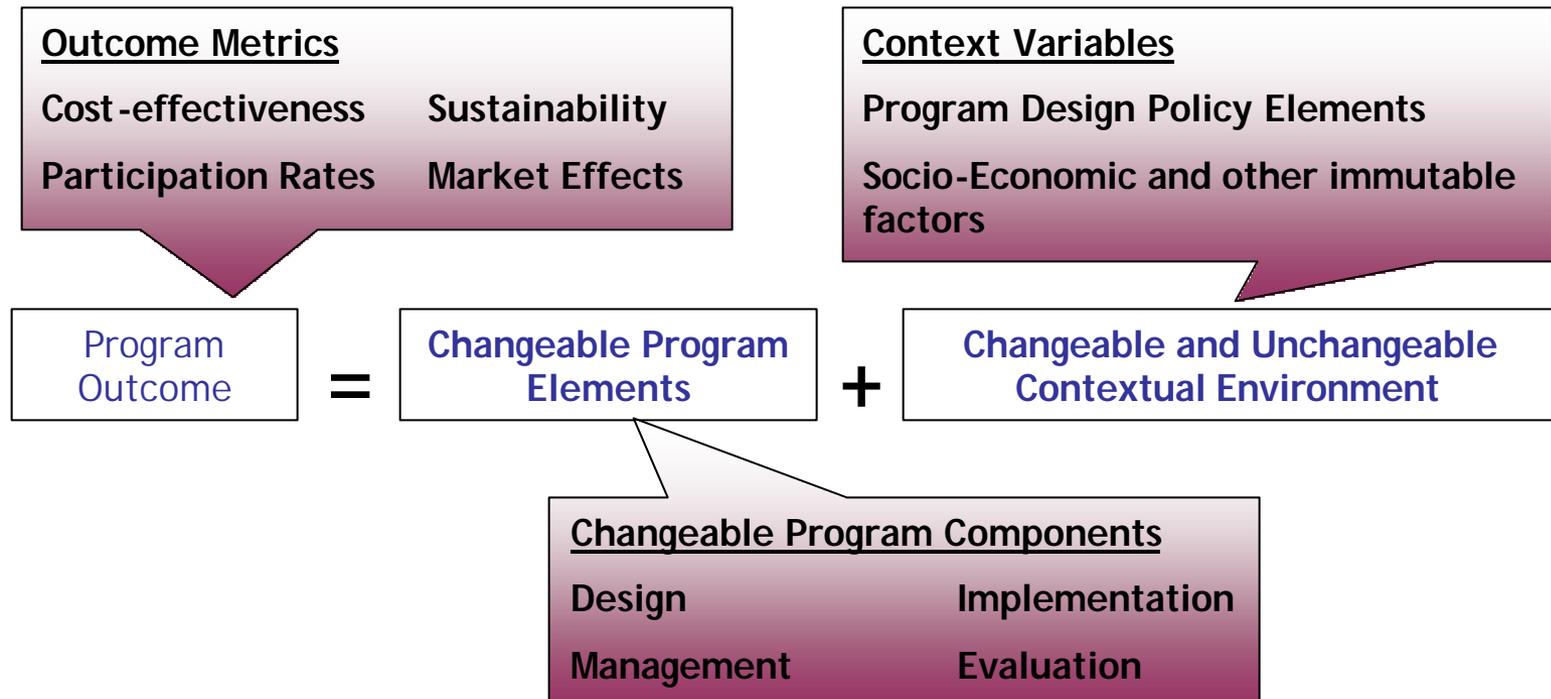
"Benchmarking is simply about making comparisons with other organizations and then learning the lessons that those comparisons reveal". Source: The European Benchmarking Code of Conduct

Best Practice

The term “Best Practice” refers to a business practice that, when compared to other business practices used to address a similar business process, produces superior results.

What Makes a Program?

- Program outcome is a function of changeable program components and changeable and unchangeable context variables



Key Questions of BP Study

- What design, implementation, evaluation & management, practices are used?
- How effective are they?
- Is there room to improve performance?
- Can knowledge help meet the challenges & opportunities in CA new EE environment?



BP Study Program Inclusion

- Referenced in previous BP-type study
- BP team recommendation
- Random selection
- Completed implementation cycle (mostly PY2002)
- Availability of program and evaluation data
- Participant willingness

Residential Lighting Chapter

- 2002 California – Cross-Cutting Statewide Residential Lighting Program
- 2002 Efficiency Vermont – Efficient Products Program, Lighting Component
- 2002 Massachusetts Electric – Residential Lighting Program
- 2002 Midwest Energy Efficiency Alliance – ENERGY STAR® Change a Light, Change the World Campaign
- 2001 NW Energy Efficiency Alliance – ENERGY STAR® Residential Lighting Program
- 2000-2001 United Illuminating – Retail Lighting Program

Context

	2002 CA	2002 EVT	2002 MA	2002 MEEA	2001 NEEA	2000-01 UI
Retail Price/ kWh	\$0.135	\$0.13	\$0.11	\$0.085 (IL) \$0.045 (KY)	\$0.06	\$0.11
Program Budget	\$9.4 million	\$1.6 million	\$3.3 million	\$630,000	\$2.6 million	\$1.5 million/yr
Total Incentives Paid	7.3 million	\$655,147	\$2.2 million	\$309,000	\$0	\$635,405/yr
Eligible Households	9.1 million	286,000	1.1 million	NA	4.2 million	276,539
Net MWh goal	192,000	NA	9,695	NA	28,032	NA
MWh achieved	162,888	11,039	18,037	10,198	271,560 BP (123,352 rev)	7,808
Unique Participants	NA	21,784	98,168	23,272	NA	13,327



Broad Themes

- Used three or more tactics
- Leveraged ENERGY STAR[®] recognition
- Supported third party verification
- Dominated by market transformation strategies
- Benefited from regional coordination and partnership efforts with other organizations

Barriers Addressed

Identified Barrier	Activity
Information and Search Costs	Use an ENERGY STAR® platform, a credible source of easily identified information
Product Unavailability	Use manufacturer buy-downs. Work directly with retailers to increase stocking and ordering of energy-efficient lighting products.
High Costs	Upstream buy-downs to increase manufacturing and reduce costs
Undervaluing EE Features (related to higher first costs)	Marketing and instant rebates expose consumers to the benefits of energy-efficient lighting products
Organizational Practices and Customs	Special events and campaigns create interest & excitement and increase sales and affect ordering and stocking



Lighting Program Best Practices

Program Theory and Design:

- Conduct sufficient market research
- Develop a sound program plan; clearly articulate a program theory
- Link program tactics to the theory



Lighting Program Best Practices

Program Mgmt: Project Management

- Define program management responsibilities
- Clearly communicate program changes
- Maintain flexibility to respond to market changes
- Clarify requirements through RFP and contracting processes



Lighting Program Best Practices

Program Mgmt: Reporting and Tracking

- Data should relate directly to program plan or theory
- Regularly review algorithms and assumptions
- Collect & track data over time
- Review tracking reports frequently to assess progress



Lighting Program Best Practices

Program Mgmt: QC and Verification

- Verify accuracy of rebates, coupons, and/or invoices
- Assure quality through independent testing procedures, such as PEARL
- Assess customer satisfaction with lighting product quality



Lighting Program Best Practices

Program Implementation: Participation

- Keep participation simple
- Link program tactics to program theory and success indicators
- Develop tactics to reach all market actors
- Allow participation strategies to evolve and change with time and progress



Lighting Program Best Practices

Program Implementation: Marketing and Outreach

- Leverage marketing dollars: co-op marketing, sponsorships, national & regional coordination
- Include retail outreach to ensure product is stocked and POP clear



Lighting Program Best Practices

Program Evaluation

- No program is too small to evaluate
- Evaluation should clearly document progress and experience
- Involve program staff to create a culture where findings are valued and used

Cost Effectiveness

Element	2002 CA	2002 EVT	2002 MA	2002 MEEA	2001 NEEA	2000-01 UI
Net-to-Gross Ratio	.80	1.27	NA	NA	NA	.57
Freeridership Rate	NA	6%	NA	NA	NA	5.7%
TRC/Societal Test	3.5	2.3:1 (B/C Ratio)	2.4	8.34:1 (B/C Ratio)	1.62	1.77
Avg. measure life (yrs)	9 (lamps)	6.4 (lamps)	8 (lamps)	7 (lamps)	7.34 (lamps)	8.6 (lamps)
Net MWh (Annual)	162,888	11,039	18,037	10,198	271,560 BP (123,352 rev)	7,808
Real Discount Rate	8.15%	6.8%	5.56%	4.5%	4.75%	5.94%

Cost Effectiveness

Budget Per Impact	2002 CA	2002 EVT	2002 MA	2002 MEEA	2001 NEEA	2000-01 UI
Net MWh (Annual)	162,888	11,039	18,037	10,198	271,560	7,808
Program Expenditures	\$9.4 M	\$1.6 M ⁶	\$3.3 M	\$630,000	\$2.6 M	\$1.5 M
Incentive Expenditures	\$7.3 M	\$655,147 ⁷	\$2.2 M	\$309,000	\$0	\$635,405
Program \$/first-year kWh saved	.058	.15	.18	.06	.01 BP (.02 rev)	.19
Incentive Dollars per kWh	.045	.06	.12	.03	NA	.08
Non-Incentive Dollars per kWh	.013	.086	.06	.03	.01	.11



Broad Lessons

- Align with other efforts in state and region
- Build relationships with market actors
(retailers, distributors, manufacturers)
- Develop robust & nimble tracking systems
- Continually streamline & simplify
participation
- Use adaptive management strategies



Energy Efficiency Programs Best Practices

Website

www.eebestpractices.com

BP Study Reports

- **Study Overview**
 - Overall Executive Summary
 - Methodology
- **Residential**
 - Lighting
 - HVAC
 - Single-Family Comp
 - Multi-Family Comp
 - Audits
 - New Construction
- **Nonresidential**
 - Lighting/Turnkey
 - Large Comprehensive
 - HVAC
 - New Construction
- **Crosscutting**
 - Mass Market Advertising